influenzæ and pneumococci or Streptococcus hemolytic infections is seen in the mode of extension in the respiratory system. Inoculated into the upper air passages it extended throughout the mucosal surfaces of these regions, with the result that sinus infections were frequent; here we have another point of resemblance to the disease in man. Further, it was even shown in a number of instances that the simple instilling of cultures of Bacillus influenzæ into the upper air passages also resulted in its extension downward to the finer ramifications, with the development of a terminal bronchiolitis followed by acute inflammatory edema and bronchopneumonia. This mode of spread by continuity along the epithelium of the air passages is in direct contrast to the mode of extension in the case of pneumococcus or Streptococcus hemolyticus, in which the organisms early invade the lymphatics and subsequently extend in these channels. These latter experiments are advanced as evidence in favor of the etiologic relation of Bacillus influenzæ to influenza. As the authors state, it seems reasonable to infer from this work that the influenza bacillus is the cause of influenza. They add, however, that a definite conclusion is not permissible, since it is impossible to determine whether the experimental disease is identical with it or only similar to it.

HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

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Investigations of the Germicidal Value of Some of the Chlorin Disinfectants.—Tilley (*Jour. Agri. Research*, October 15, 1920, No. 2, vol. xx) found that in the ordinary routine work of general disinfection, such as disinfection of cattle cars and pens, there is always a large amount of organic matter present. It is evident, therefore, that because of the enormous diminution in germicidal value on addition of organic matter, as well as because of the injurious effects on metals and fabrics, the chlorin disinfectants, as a class, do not seem to be suited for use under the usual conditions and by the usual methods of general disinfection. That is not to say, however, that when properly used they are not efficient and valuable in the treatment of infected wounds; in fact, the evidence available goes to show that they are of great value when so used; and, of course, chlorin and hypochlorites are being very widely and successfully used for the disinfection of drinking water. Compared on a basis of weight of chloramin-T as against the weight of chlorin, as sodium hypochlorite

(Dakin's solution), or hypochlorous acid (eusol), or as chlorin in aqueous solution, chloramin-T is less efficient than the others. But if the comparison is made on the basis of available chlorin contained it is much more efficient against Staphylococcus aureus, much less efficient against Bacillus pyocyaneus and approximately equal in efficiency against Bacillus typhosus. The experiments upon Bacillus tuberculosis indicate that the chlorin disinfectants are worth very little so far as that organism is concerned. This is not surprising in view of the use of antiformin (NaOCl + NaOH) in isolating tubercle bacilli. In the present work, considered as a whole, there is seen throughout more or less "selective action" on the part of the various disinfectants. The most clearly defined example of this is seen in the extremely high value of chloramin-T against Staphylococcus aureus as compared with its extremely low value against Bacillus pyocyaneus. The results of the experiments upon anthrax spores show that the germicidal action of chlorin compounds is not always so speedy as is commonly supposed, but may extend over several days. The addition of ammonia to solutions of chlorin or hypochlorites very greatly increases germicidal activity and tends to prevent depreciation in value on the addition of organic matter.

Streptococci Occurring in Sour Milk.—Jones (*Jour. Exp. Med.*, January 1, 1921, No. 1, xxxiii, 13) states that a well-defined group of rod-like and coccoid organisms arranged in chains and pairs has been encountered in sour milk. The group comprises at least three species; the largest number ferment dextrose, lactose, maltose, mannitol and salicin, and fail to ferment saccharose, raffinose and inulin. A smaller number ferment saccharose in addition to dextrose, lactose, maltose, mannitol and salicin. A few fail to attack mannitol. All three types grow luxuriantly at room temperature, coagulate milk, reduce litmus, and produce large amounts of acid in fermented bouillon containing dextrose. Specific morphologic and cultural differences exist between the lactic acid streptococci and those associated with mastitis and those occurring in the udder. The lactic acid organisms outgrow the udder streptococci in the milk-souring process. When both types are implanted in sterile milk the udder type soon disappears.

Fate of Microörganisms Introduced into Isolated Loops of the Intestine.—Eiskamp and Park (*Jour. Infect. Dis.*, January, 1921, No. 1, xxviii, 67) state that many specific microörganisms injected into isolated loops of the intestine of dogs are destroyed in periods ranging from two to seven hours. This destruction is not due to the antagonistic action of the normal intestinal flora. There is evidently a distinct antibacterial mechanism in the intestine, the nature of which is at present unknown.

Commission on Milk Standards.—The report (*Public Health Reports*, December 10, 1920, No. 50, xxxv, 2955) approves of pasteurization of milk as follows: "(*a*) That pasteurization of milk should be between the limits of 140° F. and 155° F. At 140° F. the minimum exposure should be twenty minutes. For every degree above 140° F. the time may be reduced by one minute. In no case should the exposure be for less than five minutes. (*b*) In order to allow a margin of safety under commercial conditions the commission recommends that the minimum temperature during the period of holding should be made 145° F. and the holding time thirty minutes." Under the head of "Scurvy" the reduction of vitamines by pasteurization is recognized and the use of an antiscorbutic is recommended with the pasteurized milk. In the consideration of dried milk a liberal policy is recommended, as indicated by the following: "WHEREAS, The commission is fully convinced that an increased consumption of milk in its various forms would be highly advantageous to the public health; and WHEREAS, The production and sale of dried and remade milk tend to increase, stabilize and conserve the milk supply; and WHEREAS, All evidence now available favors the view that properly prepared dried milk may be regarded as of nutritional value equal to milk of light grade and that the vitamine content of dried milk and pasteurized milk is substantially the same: THEREFORE BE IT RESOLVED, that the Commission urge upon the health and food control officials a liberal attitude such as shall encourage and not hamper the dried milk industry."

Accuracy of the Schick Reaction.—ZINGHER (*Jour. Am. Med. Assn.*, November 13, 1920, No. 20, lxxv, 1333) states that the accuracy of the Schick test depends on the strength of the toxin, the technic of the test and the interpretation of the reaction. Errors in any of these may make the results of the test unreliable. It is possible to guard against a poor technic and a wrong interpretation of the reaction, but it is essential to be able to depend on the accuracy of the outfits for the Schick test obtainable on the market. The outfits furnished by four commercial laboratories were tested. Of five outfits of one laboratory, two contained too small an amount of toxin to give a positive reaction in Schick-positive children. Of three outfits of the second laboratory one was somewhat weaker and two very much weaker than the standard outfit, so that negative reactions were obtained in Schick-positive individuals. The outfits of the third laboratory compared fairly well with the control in the clinical test when twice the amount of toxin dilution prescribed in the directions on the outfits was injected. The animal test showed only about 85 to 90 per cent. of a minimal lethal dose in an outfit instead of one minimal lethal dose. The outfits of the fourth laboratory gave reactions similar to those noted with the control test. The outfits furnished by the Research Laboratory of the Department of Health of New York City gave practically uniform results clinically and the animal test showed full potency of the toxin. It is practicable to manufacture outfits for the Schick test on a large scale without sacrificing accuracy.

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